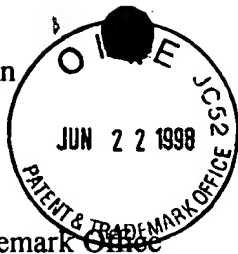


William H. Swain

Serial Number 08/579,395

Prior Art Unit: 2213



Patent and Trademark Office  
Commissioner of Patents and Trademarks  
Washington, DC 20231

June 16, 1998

Re:

William H. Swain, inventor

Error Correction by Selective Modulation

SN 08/579,395; Filed 12/27/95; Art 2213

Patent Examiner: Mr. Russell M. Kobert

Group 2858

703-308-5222, or 305-4900

Primary Examiner: Josie Ballato

*12/Amat. B*  
*Sheresa*  
*7-1-98*

*Sheresa*  
*7-1-98*

RECEIVED

JUN 29 1998

GROUP 2100

Subject:

Reply to the Action of 8 June 1998.

1) Introduction:

This response generally follows the examiner's action of 8 June 1998.

Applicant accepts that the amendment to the claims included in the reply filed February 17, 1998 have not been entered.

All 31 claims discussed in applicant's reply of 17 Feb 98 are included in this reply. Of these, 26 claims are unchanged, and 5 are amended in conformance with MPEP 714.22 and 37 CFR 1.121(d).

The requested \$104 fee is enclosed.

Applicant has long understood that the Examiner has grouped this work into three "inventions", designated by Roman numerals. This and previous responses (Table I on page 2 of 17 Feb 98, in particular) were prepared with this in mind.

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02 FC:103

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Applicant welcomes the Examiner's finding the appearance bona fide in the reply of 17 Feb 98.

Considerable thought and time went into it's preparation.

Applicant includes by reference all of the 17 Feb. 98 reply as part of this present reply - excepting the 31 claims themselves. All 31 claims - fully stated - are enclosed with this reply.

2) Claims, and amended claims.

Since the amendments to the claims as stated in the 17 Feb. 98 reply have not been entered, they will not be discussed much herein.

This is the first amendment to the original 13 claims in the Application of 27 December 1995.

Claim 1 (amended) presented herewith is changed to show more definitely that it teaches a Process of Making (PM). This is detailed in the 17 Feb. 98 reply.

Summary paragraph 3.1 and Table I on page 2 of the 17 Feb. 98 reply are inserted here revised to show amended claims. This table helps me to keep track of claims.

Claim 10 (amended) is also changed to show more definitely that it teaches a Process of Making (PM). This is detailed in the 17 Feb. 98 reply.

Claim 12 (amended) is treated similarly).

Claims 2, 3, 4, 5, 6, 7, 8, 9, 11, and 13 are presented herewith in the same language as the Application.

All amendments follow the 5 added word limit with underlining, plus [brackets] for deletion.

By error, a few words were underlined in the claims in the 17 Feb. 98 reply. Prior to this there were no claim words underlined, nor are there any included herein. Brackets were never included in the claims, nor are they now.

The symbol for the division operator should not be understood as underlining. For example, Claim 8 on Claim page 3 herein includes:

$$\Psi \equiv \frac{\delta V / \delta N}{g}$$

together with the preceding explanatory words

“...Ψ, defined as the change in said output per unit change in said noise, all divided by said gain...”

Thus, the horizontal line is shown to be a symbol for the division operator, not an underlining.

Repeating a part of the 17 Feb. 98 reply, - page 2, we say:

### 3.1 Summary response to Examiner's paragraph 3; revised 6-17-98.

Some of Applicant's previous Claims are now seen as indefinite as to Process of Making (PM) or Method of Use (Mu). These have been revised to make them more definite in showing that all claims, both now and before, are and were intended to be Process of Making, or Apparatus (AP).

Table I is added to clarify Applicant's position with respect to that of the Examiner's action. The left side of the page is a summary of my understanding of the Examiner's action. The right side is Applicant's statement of the genus, species, and type of each claim as now presented.

The 6-17-98 revision in the right hand column shows claims which are now presented as amended, and those that are not amended.

Table I

Examiner		Applicant		6-17-98			
Invention	Species	Type	Claim	Genus	Species	Type	amended
1	(1)	Mu	1	14	Comb	PM	yes
1	(1)	Mu	2	14	Comb	PM	no
1	(1)	Mu	3	14	Comb	PM	no
1	(1)	Mu	4	14.1	Comb	PM	no
1	(1)	Mu	5	14.1	Comb	PM	no
1	(1)	Mu	6	14.2	Comb	PM	no
1	(1)	Mu	7	14.2	Comb	PM	no
11	(1)	AP	8	14	Comb	AP	no
11	(1)	AP	9	14.1	Comb	AP	no
1	(2)	Mu	10	14	Comb	PM	yes
1	(2)	Mu	11	14.1	Comb	PM	no
1	(3)	Mu	12	14.2	Better	PM	yes
11	(2)	AP	13	14.2	Better	AP	no
11	(3)	AP	14	Genus 14	General	AP	no
11	(4)	AP	15	14	Better	AP	no
11	(5)	AP	16	14	Comb	AP	no
111	(1)	PM	17	14	Comb	PM	no
111	(1)	PM	18	14	Comb	PM	no
111	(1)	PM	19	14	Comb	PM	no
111	(1)	PM	20	14.1	Comb	PM	no
111	(1)	PM	21	14.1	Comb	PM	no
111	(1)	PM	22	14.2	Comb	PM	no
111	(1)	PM	23	14.2	Comb	PM	no
11	(5)	AP	24	14	Comb	AP	no
11	(5)	AP	25	14.1	Comb	AP	no
1	(4)	Mu	26	14	Comb	PM	yes
1	(4)	Mu	27	14.1	Comb	PM	no
111	(2)	PM	28	14.2	Better	PM	yes
11	(6)	AP	29	14.2	Better	AP	no
NEW			14.1 = 30 Genus	(14 Limited to Non-Contact)			no
NEW			14.2 = 31 Genus	(14 Limited to Swain)			no

AP = Apparatus

Mu = Method of Use

PM = Process of Making

Total number of species = 12.

Comb = Combiner Species

Better = Better SNR Species

Detailed Discussion

The Examiner's Action of 8 June 98 is discussed in more detail, and following the Examiner's order.

1. This reply is intended to provide material needed to complete the response begun 17 Feb. 98.

A) Added Claims

Applicant encloses herewith 2 claims - #30 and #31 - first sent in 17 Feb. 98 filing. The fee was then unknown. The Examiner's calculation is appreciated. Our check for \$104 is enclosed.

Applicant is not aware of any other omission with respect to Claims 30 and 31. Applicant requests that these claims be entered.

Amended Claims

Twenty six of Applicant's claims are the same as before, i.e., they were not and are not now amended. These are listed in revised Table I enclosed.

Five of Applicant's claims were and are now amended. These are listed in Table I.

Of the 13 claims in the original Application as filed, only 3 are amended. The other 10 here enclosed are the same as in the original Application.

The amended claims are #1, 10, and 12. As presented herewith, they are believed to conform to 37 CFR 1.121 and MPEP 714.22. Added words are 5 or less, and underlined. Deleted words are bracketed. And the claim numbers are followed by (amended).

Applicant requests that these claims amendments be entered.

#### 6.43 Brackets or underlining

None of Applicant's claims - present or past - include brackets except to symbolize a deletion. So brackets cannot impede amendment.

In error, several claims in the 17 Feb. 98 response included a few underlined words which were not to symbolize amendment. This error has been corrected in all claims enclosed herewith.

Claim words included herewith are underlined only to show an addition, and the claim number is followed by (amended). So underlining cannot now impede amendment.

#### Definitions of gain g, noise sensitivity $\Psi$ , etc.

Claim comprehension is faster and easier when certain parts are expressed as an algebraic equation. An example is Claim 8, line 14.

The general idea of gain g is well known to those skilled in the art. What needs to be explained specifically for Claim 8 is what Applicant calls gain. The relation

$$g \equiv \frac{\delta V}{\delta I}$$

is presented so that those skilled in the art will easily see that, as Claim 8 first says, "...more particularly, in said sensor said output V change per unit signal input I change is here called gain g..."

Therefore the horizontal line between  $\delta V$  and  $\delta I$  is understood to be the symbol for the division operator - not underlining.

A second example appears in Claim 8, line 16. Here Claim 8 states "...noise sensitivity  $\Psi$ , defined as the change in said output per unit change in said noise, all divided by said gain, i.e.,

$$\Psi \equiv \frac{\delta V / \delta N}{g}, \dots"$$

Again, the horizontal line is understood to symbolize the operation of division, and not underlining.

Claim 10, line 35 provides another example. Claim 10 states "...the value of said  $\eta$  is usually close to said  $\Psi_A$  divided by said  $\Psi_B$ ...

$$...\eta = \frac{\Psi_A}{\Psi_B}, \text{ approximately..."}$$

Thus the equation, which is readily understood, is described as requiring the division of one quantity by another. The horizontal line symbolizes division. It is not an underline.

So the symbol for the division operator cannot impede amendment.

Applicant requests that the amended claims be entered as shown herewith.

B) Applicant understands the need to pay an added fee for the two additional claims 30 and 31 enclosed herewith. Our check for \$104 (#10633, dated 17 June 98) is enclosed herewith.

Applicant requests that our response now be deemed complete and claims 30 and 31 entered.

2) Applicant interpreted the Examiner's Action of 16 January 98, when it was received on 21 Jan 98, as dividing my invention into 3 parts, designated "inventions" 1, 11, 111 with some sort of numeral, likely Roman. This is illustrated in the left hand column of enclosed amended Table I which was originally a part of page 2, paragraph 3.1 in my response of 17 Feb. 98.

Regrettably, our computer writes a single "1" more readily than a pure Roman "one". It is requested that the Examiner read as Roman numerals our designation of his three "inventions" which we marked "1", "11", and "111".

Applicant's response of 17 Feb. 98, except for the claims, is included by reference as a part of this response. The 17 Feb. 98 response traverses every ground of the Examiner's request to restrict my invention to just one, or just a part of one of the Examiner's three "inventions".

Briefly, the 17 Feb. 98 response uses the Application of 27 Dec. 95 as ground for logic showing that the invention is one, and only one - not three or more.

Basically, the invention is founded on genus Claim 14. This teaches a sensor with the "Essential Characteristic", namely, the signal to noise ratio (SNR) changes a lot when a parameter (Q) is changed.

All claims are in one of two species: Combiner or Better SNR. Broadly, a Combiner claim teaches the use of signals derived from at least two different SNR states due to at least two different conditions of an operating parameter Q. These are joined to nearly cancel noise.

A better SNR claim teaches the use of a superior SNR state due to a preferred condition of an operating parameter Q. The effect is to considerably reduce noise.

Applicant is grateful that the response of 17 Feb. 98 appears to be bona fide. I used considerable thought and effort toward that end.

Applicant requests that the 31 claims enclosed herewith as pages C-1 through C-27 be entered and examined as one invention.

*William H. Swain*  
*Inventor*  
*6-17-98*